



Prosodic Marking of Information Focus in French

Claire Beyssade, Barbara Hemforth, Jean-Marie Marandin, Cristel Portes

► To cite this version:

Claire Beyssade, Barbara Hemforth, Jean-Marie Marandin, Cristel Portes. Prosodic Marking of Information Focus in French. Interface Discours/Prosodie, 2009, Paris, France. pp.109-122. halshs-00751070

HAL Id: halshs-00751070

<https://shs.hal.science/halshs-00751070>

Submitted on 21 Nov 2012

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Prosodic Markings of Information Focus in French

Claire Beyssade, Barbara Hemforth, Jean-Marie Marandin & Cristel Portes

claire.beyssade@ehess.fr*, barbara.hemforth@univ-paris5.fr**,
marandin@linguist.jussieu.fr***; cristel.portes@lpl-aix.fr****

*Institut J. Nicod : CNRS-ENS-EHESS ; **LPNC : CNRS et U. Paris René Descartes ;
LLF : CNRS et U. Paris-Diderot ; *LPL : CNRS et U. Provence

Abstract:

This article addresses the controversial issue of the prosodic marking of Information Focus in French. We report the results of three experiments (one in production two in perception) that support three claims. The first one is empirical. Phrases that resolve a question may be set off by two types of intonational marks in French: they host the nuclear pitch accent (NPA) on their right edge and/or they are intonationally highlighted (IH). The second one is analytical: NPA placement is sensitive to the informational/illocutionary partition of the content of utterances, while intonational highlighting (IH) is sensitive to any type of distinguishedness: semantic or pragmatic. The third one is methodological: the “Question/Answer” pair provides a criterion to identify the Information Focus (i.e. the part of content specifically asserted and making up the update brought about by the utterance) only if the answer is congruent. Congruence of answers is impossible to control in experiments based on question/answers pairs.

1. Introduction

There is presently no consensus about the phonology of Information Focus (IF) in French. Among others, Fery 2001 claims that the reflex of IF is prosodic and belongs to phrasing, while Di Cristo 1999 or Beyssade *et al.* 2004 claim that it is intonational and resorts to specific pitch movements. Here, we report the results of three experiments that contribute evidence relevant to the choice between the competing descriptive or analytical claims currently debated.

As a working hypothesis, we admit that the Question/Answer pair yields a criterion to identify the IF in utterances: the IF is the part of the content of answers that resolves the question. We put such a definition to use in the design of several experiments whose results are presented here. At first glance, the phenomenology of the prosodic/intonational realization of resolving XPs in answers is indeed varied. Accordingly, the question is whether IF gives rise to a systematic prosodic/intonational marking in French. We eventually give a positive answer and claim that the diversity results from the interplay of two distinct marking strategies: the placement of the nuclear pitch accent in the utterance and the intonational highlighting of phrases. Moreover, those two strategies cue two distinct types of semantic/pragmatic statuses, which are currently lumped together in the notion of IF: being specifically asserted and being distinguished in the content conveyed in the assertion.

The paper proceeds as follows. We briefly establish our terminology in section 2. In section 3, we describe the corpus obtained via a production experiment and present an analysis assuming the working hypothesis that resolving XPs are information foci. In section 4, we report the results of two perceptual experiments designed to verify whether speakers recognize the two distinct marking strategies observed in the production corpus and relate them to the resolution of questions. In section 5, we present a more comprehensive analysis, which accounts for both intonational marking strategies.

2. Descriptive framework

2.1. Terminology for the question/answer pair

Let's consider the two dialogues (1a) and (1b), involving discourse participants A and B. We call the question in (1a) a broad question and that in (1b) a partial question.

- (1) a. A: What happened? B [Jean invited Marie to the party yesterday night]_F
 b. A: Who did Jean invite? B: Jean invited [Marie]_F to the party yesterday night

In (1a), the resolving XP (R-XPs for short henceforth) is the whole sentence; in (1b), it is the Object NP. Under the assumption that IF is the part of content that resolves the question, the IF is contributed by the whole sentence in (1a), by the Object NP in (1b). Answer (1a) is an All Focus answer and (1b) a Narrow Focus one (a. o. Lambrecht 1994, Vallduví & Engdahl 1996).

It must be kept in mind that the equation “R-XP = IF” is only valid in congruent answers; congruent answers are answers that strictly convey a value for the parameter introduced in the question (Krifka 2001, Kadmon 2001). Are thus excluded over- or under-informative answers of any types. This limitation will turn important for the comprehensive analysis of the data we present in section 5.

It is usually assumed in the literature that resolving the question is an appropriate criterion for IF, because it is a criterion for the newness of the content it contributes. The notion of new (vs. old) is notoriously vague. Here, we take it that “new” means the content the speaker proposes for updating the part of the Common Ground under discussion. Accordingly, new is closely linked to the working of the assertion in declaratives: what is new is this part of the content that is specifically asserted by the Speaker.

We strictly restrict ourselves to the Question/Answer pair here. We do not consider utterances conveying some sort of contrast be they corrections or denials (as e. g. in Jun & Fougeron 2000 or Dohen & Lowenbruck 2004). We assume that the intonational correlates of contrast are different from those of IF (Beyssade et al 2004, Selkirk 2009).

2.2. Prosodic framework

Our analysis is couched in the autosegmental-metrical framework (AMT). Two categories grounded in the descriptions and modeling of French proposed by the Aix-en-Provence school (Di Cristo 1999, Rossi 1999) play a central role in this study. We briefly introduce them here; they will be illustrated in the next section.

- Nuclear pitch accent (NPA). In keeping with Ladd 1996, Di Cristo introduces the notion of nuclear accent in the autosegmental analysis of French: it is the most prominent accent in the utterance. It typically occurs as the last accent in the utterance. When XPs occur to the right of the NPA, they are deaccented without being dephrased (Di Cristo & Jankowski 1999).¹ Di Cristo relates the placement of the nuclear accent to the marking of the information structure of the utterance and shows that an early placement in the utterance does not necessarily trigger a contrastive interpretation. Here, we assume that the intonational correlate of Di Cristo's nuclear accent is analyzable as a pitch accent in mainstream AMT. Hence the label:

¹ The deaccentuation is more accurately defined as the result of a more or less complete compression of the pitch range (Di Cristo, 1999 : 262).

nuclear pitch accent (NPA).²

- Intonational highlighting (IH). The intonational highlighting corresponds to an intonational setting off of a phrase realized as a cluster of phenomena involving pitch contour and pitch range (Di Cristo 1999, Rossi 1999). It involves an initial accentuation, (IA) which may form an “accentual arch” with the following rising accent, or triggers a high plateau up to the following accent. The IA or the high plateau is generally implemented quite high in the pitch range.³

3. Marking of resolving XPs

The corpus of answers we analyze here has been elicited via a production experiment. They correspond to the control utterances in a larger experiment devoted to the prosodic/intonational realization of the associate of the adverb *seulement* (*only*). (Beyssade *et al.* 2008).

3.1. Experiment 1: set-up

Short texts, involving a description of the context such as (2) and a question/answer pair such as (3) were presented to the subjects. The contexts and the questions were presented visually as well as auditorily. There were two types of questions: partial questions (bearing on the Object) (3a) and broad questions (bearing on the whole sentence) (3b). The subjects’ task was to read aloud answers as if they were actually participating in a dialogue.

(2) Context [translated]: Richard is a policeman. He has to treat various documents (films, leaflets, K7s) seized in a terrorist cache.

- (3) a. Le responsable : Qu'as-tu visionné la nuit dernière ? *What did you screen last night?*
Richard : J'ai visionné les vidéos la nuit dernière. *I screened the videos last night*
b. Le responsable : Où en es-tu dans ton enquête ? *What's up with your investigation?*
Richard : J'ai visionné les vidéos la nuit dernière. *I screened the videos last night*

We recorded 112 answers from 14 participants from the University Paris Descartes: 10 of them were psychology students who received course credits for participation and four were psychological staff. None of the participants had any training in linguistics. We only analyzed 107 of the answers here: 5 answers were not taken into account in our quantitative analyses because of disfluencies or production errors.

² A caveat here is in order: there is no consensus about the repertory of NPAs required to analyze French intonation: Post 2000 has two (H*, H+H*), Beyssade *et al.* 2004 have four (L*, H*, HL*, H+L*). In particular, NPAs are part of contours whose analysis may involve the positing of edge tones. We will not commit ourselves to a specific repertory here, as our study does not depend on a fine-grained analysis of those contours. For example, it does not depend on whether a Rise-Fall is analyzed as HL*, H*L- or H*L% as long as it involves the NPA. Notice that we assume the idea (stemming from Delattre 1969) that those nuclear contours are « contrastive », i. e. convey distinct pragmatic values.

³ The intonational highlighting roughly corresponds to the “focalisation d’emphase marquée bilatéralement” in Di Cristo (1999 : 266).

3.2. Results

Results are graphically presented in Figures 1 (a,b).

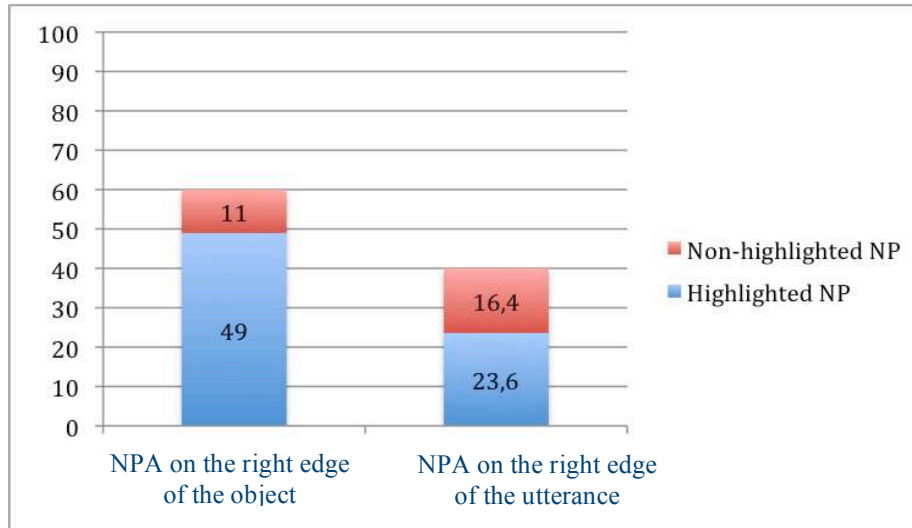


Figure 1a: Answers to partial questions. On the x axis, the position of the NPA; on the y axis, the percentage of answers for each NPA position; in red the percentage of non IH objects and in blue the percentage of IH objects.

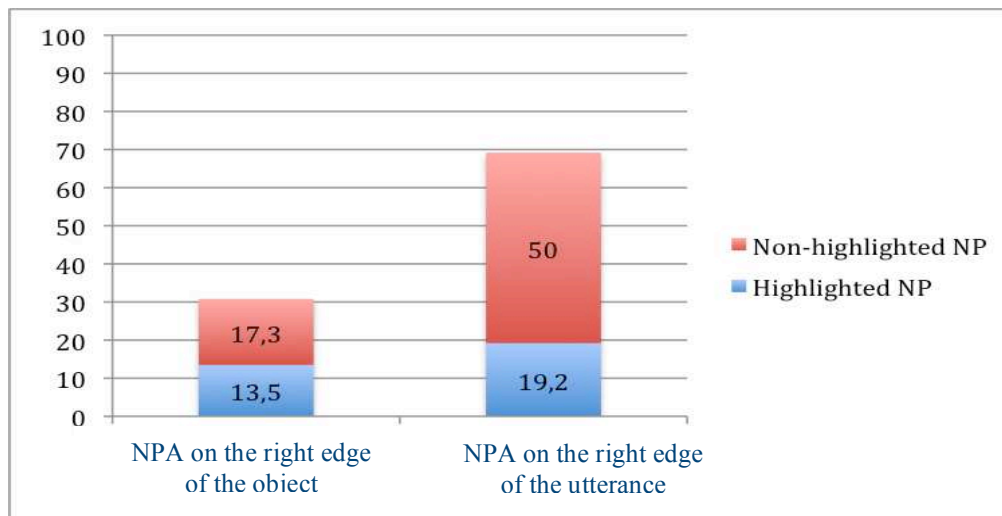


Figure 1b: Answers to broad questions. On the x axis, the position of the NPA; on the y axis, the percentage of answers for each NPA position; in red the percentage of non IH objects and in blue the percentage of IH objects.

3.2.1. Answers to partial questions

The Object noun phrases in answers to partial questions are distinguished in three different ways:

- (4) a. The Object hosts the NPA on its right edge and it is IH (intonationally highlighted) (Fig. 2);
 b. The Object hosts the NPA on its right edge without being IH (Fig. 3);
 c. The Object is IH, while the NPA occurs at the end of the utterance (Fig. 4).

Pattern (4a) conjoins the placement of NPA and IH. It is the most frequent pattern with 49 % of all answers. NPA placement and IH appear separately in the two other patterns (4b, 4c). Pattern (4b) features the placement of the NPA on the Object with the corresponding deaccenting of the PP to the right. It is the least attested pattern (11% of the whole answers). Pattern (4c) highlights the Object, while the NPA occurs at the end of the utterance. Crucially, the PP to the right of the Object is not deaccented. This pattern is well represented in the corpus: 23,6 % of all answers. Finally, there are 16,4% of the answers in which the Object is not distinguished: we come back to them in section 5 below.

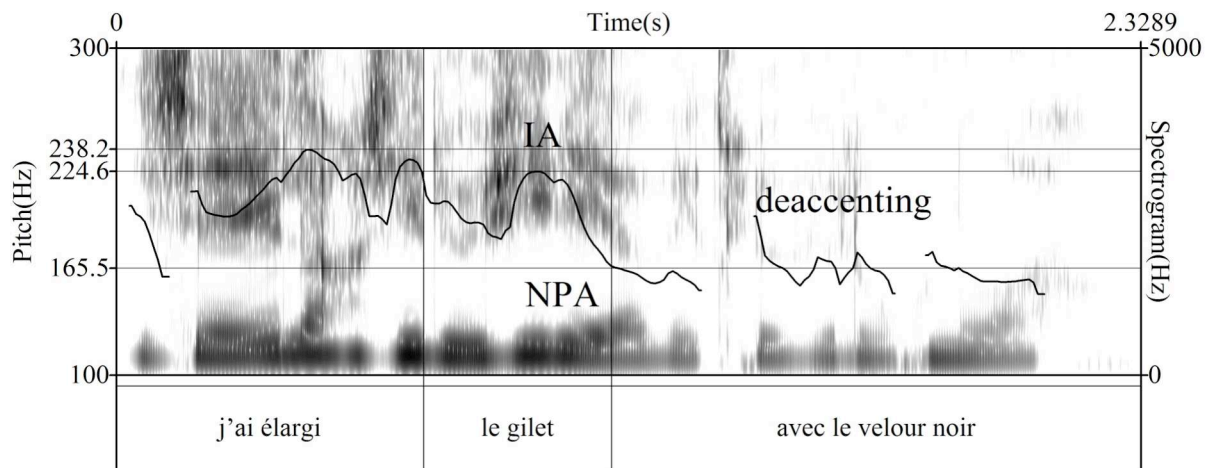


Figure 2. Answers with pattern 4a: IH Object (with a high implemented initial accent IA) and Object-final NPA.

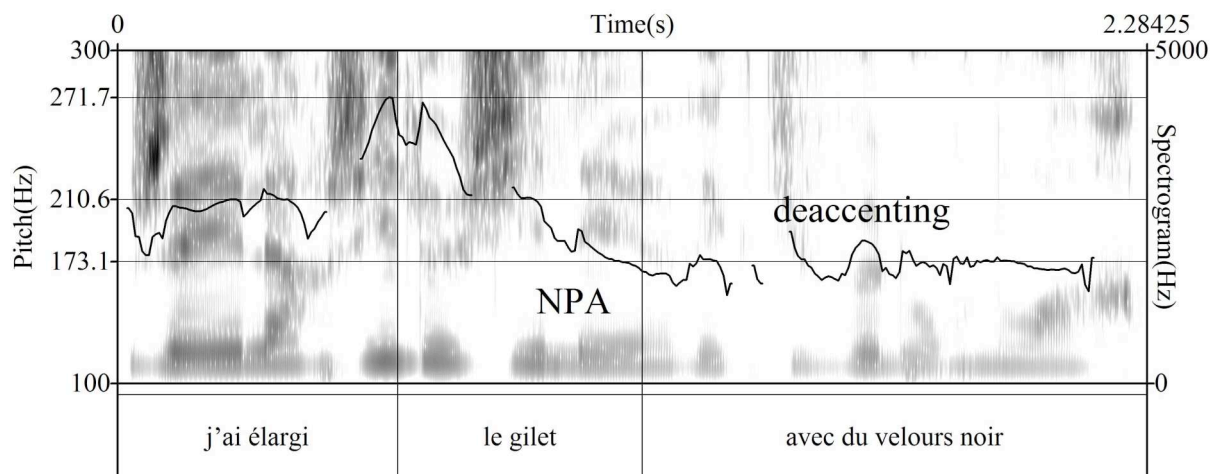


Figure 3. Answers with pattern 4b: Object-final NPA and no IH.

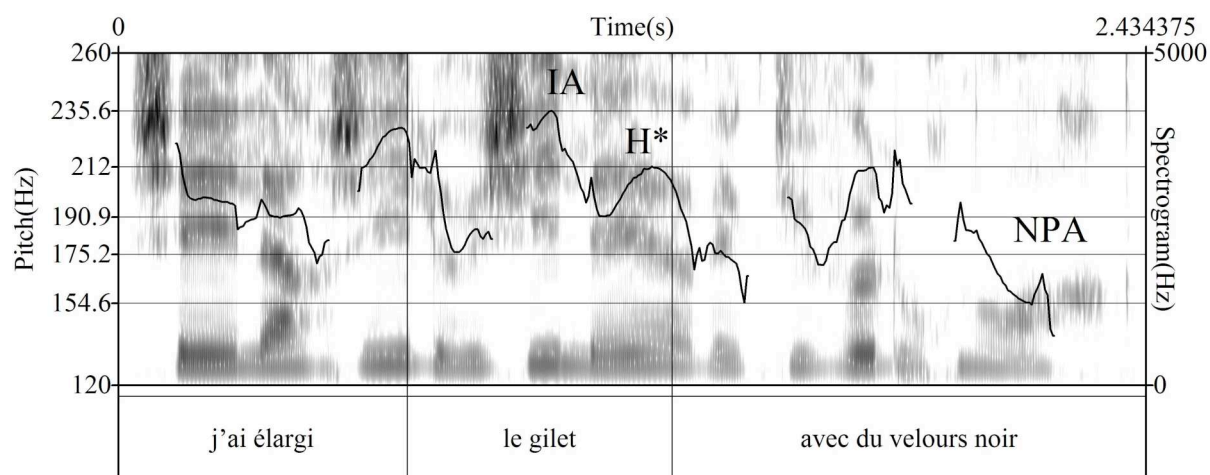


Figure 4. Answers with IH object (realization of an accentual arch IA-H*) and utterance-final NPA.

3.2.2. Answers to broad questions

69,2% of the answers to broad questions show pattern (5):

(5) NPA occurs at the right edge of the utterance (NPA is utterance final).

Pattern (5) generally gives rise to a regular downstep of the accentual phrases following the initial accentual phrase (figure 5). No constituent is highlighted: no high implemented initial accent occurs. This pattern corresponds to 50% of all answers to broad questions.

The remaining answers feature one of the patterns described in (4) for answers to a partial question. 30,8% (i.e. 17,3 + 13,5) of all answers show the NPA on the right edge of the Object, which corresponds to patterns (4a = with IH) and (4b = without IH). Moreover, 19,2% of the answers that show the NPA on the right edge of the utterance feature a highlighted Object, which corresponds to pattern (4c). We come back to those two cases in section 5 below.

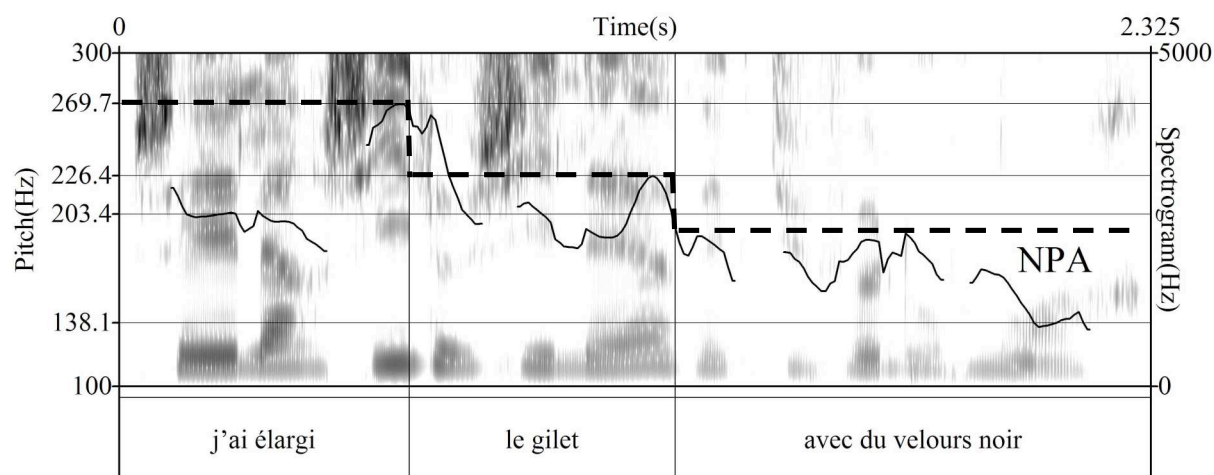


Figure 5. Answers with Utterance-final NPA and downstep of the second and third accentual phrases. Downstep is modeled as a reference base line defined by the H targets (dashed line in bold) as proposed by van den Berg et al. (1992).

3.3. Analysis

We first analyze the patterns we observe in the data assuming the working hypothesis that X-RPs are IFs and the intonational approach to IF marking as defined in (6).

(6) XPs contributing the IF host the NPA on their right edge.

Claim (6) is proposed by Di Cristo (1999) or Beyssade *et al.* (2004). According to Di Cristo, the right edge of XPs contributing the IF (focal XP for short) provide the site for anchoring the nuclear accent. The nuclear accent is a Low tone in declarative sentences.⁴ Beyssade *et al.* take up Di Cristo's claim and generalize it: on the basis of corpus observation, they claim that the right edge of focal XPs may anchor the whole repertory of nuclear pitch accents in French. In their framework, it may host L*, H*, HL* and H+L*. In both approaches, IF marking is identical for narrow and broad IF: in the former case, IF is contributed by a phrase while it is contributed by the whole sentence in the latter. Moreover, Di Cristo and Beyssade *et al.* also observe that initial accentuation (IA) may occur on the first left syllable(s) of the phrase conveying narrow IF. Di Cristo proposes that IA marks the left edge of the narrow focal XP: he speaks of bilateral marking of Focus. As for Beyssade *et al.*, they speculate that IA can be related to contrastive focus (following Rossi 1999).

Claim (6) is corroborated in the majority of the cases:

- 60% of the answers to a partial question show the NPA at the right edge of the Object;
- 69,2 % of the answers to a broad question show the NPA at the right edge of the utterance.

Moreover, it can be observed that several types of NPA contours occur at those edges, which corroborates Beyssade *et al.*'s generalization. Three types of nuclear pitch movement are attested in the corpus:

- falls (corresponding to Di Cristo's B or Beyssade *et al.*'s L*) (Fig. 2, 3 and 4) above;
- falls from the penultimate, which corresponds to Post's H+H* or Beyssade *et al.*'s H+L*: the pitch pick occurs on the penultimate syllable and the following valley on the last syllable. It is illustrated for narrow IF in Figure 6.

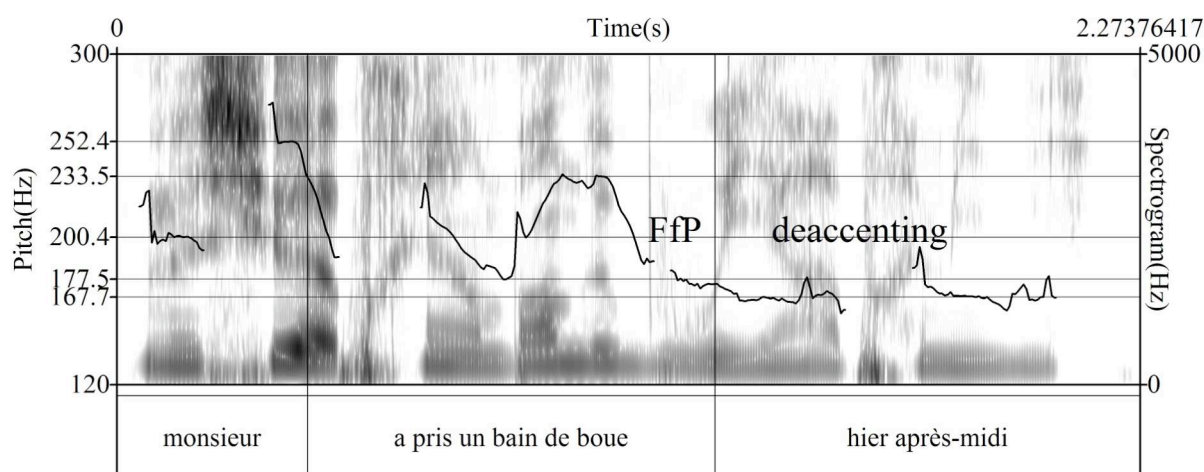


Figure 6. Narrow focus answer with a fall from the penultimate (FfP) occurring at the right edge of the focused Object "bain de boue". Note that an initial accent occurs on "bain" immediately followed by the initial pick of the fall on the penultimate syllable "de" which contains a schwa.

⁴ In Di Cristo's system, the Low tone is labelled B and called a conclusive morpheme.

– rise-falls for which the pitch peak and the following valley occur on the last syllable. It is illustrated for narrow IF in Figure 7.

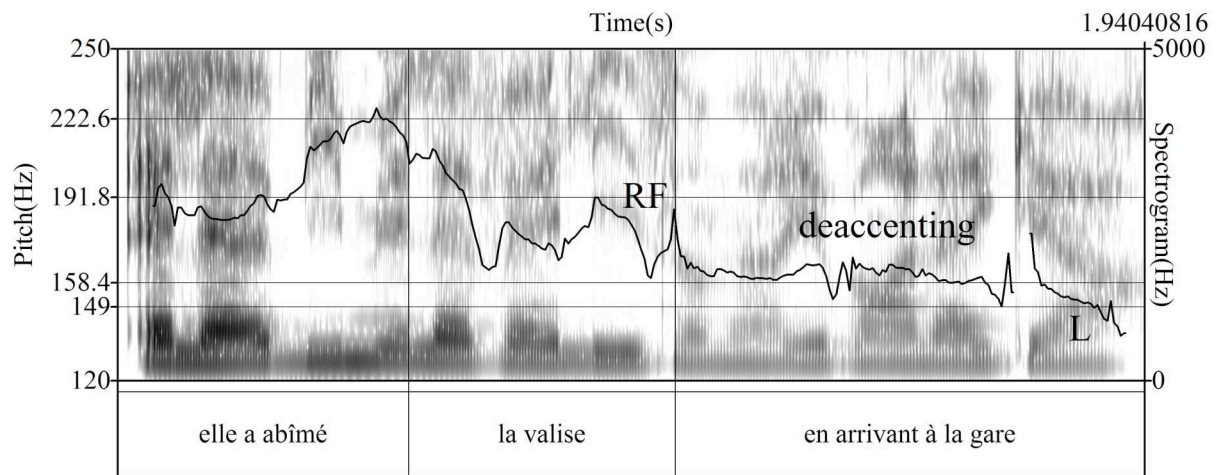


Figure 7. Narrow focus answer with a rise- fall (RF) occurring at the right edge of the focused Object NP “la valise”.

Nevertheless, two facts do not fit the picture predicted by (6) and call for another analysis.

(7) The high frequency of Intonational Highlighting on the Objects.

72,6% (i.e. 49 + 23,6) of the answers to a partial question show a highlighted object. Among them, 23,6% – presenting pattern (4c)– show only highlighting of the Object, while the NPA is docked at the right edge of the sentence.

(8) The high number of answers that do not abide by (6).

This is the case for 40% of the answers to a partial question, and 30,8% of the answers to a broad question.

We take (7) first and propose the hypothesis in (9) to account for the use of IH in answers:

(9) The XP resolving a narrow question may be marked either by NPA placement or by IH.

We devote the next section to the corroboration of (9) and we come back to (8) in section 5 where we present a more comprehensive analysis of IF marking.

4. Intonational highlighting

We ran two perception experiments in order to check hypothesis (9). In Experiment II, we are testing whether IH alone can be recognized as a way of marking the XP resolving a question. In Experiment III we asked whether IH is linked to the expression of Contrast (as suggested by Rossi 1999 and taken up by Beyssade *et al.* 2004).

4.1. Experiment II

Set-up. We selected 20 answers from the preceding corpus: 10 realizations with NPA at the end of the sentence and no IH that are supposed to be identified as all focus answers, 10 with marking of the Object (5 with NPA and 5 with IH only) which, conversely, are predicted to be identified as narrow focus answers. The sentences were presented in two blocks. The first block is composed of 5 answers with final NPA (hypothesized all focus) and 5 sentences with final NPA and IH on the object NP (hypothesized narrow focus). The second block is composed of 5 answers with final NPA (expected all focus) and 5 answers with NPA on the object NP (expected narrow focus). The 10 sentences composing each block were presented in random order. The subjects had to listen to the selected items and to judge to which of two visually presented questions the current sentence had been produced as an answer (10). The experiment involved 24 subjects, native speakers of French, first year undergrad students in Humanities at U. Paris Diderot.

(10) Questions:

1. Pour finir, qu'est-ce que tu as élargi ? *Finally, what have you let out?*

2. Pour finir, tu t'en es sorti comment ? *Finally, how did you get by?*

Answer: J'ai élargi le gilet avec du velours noir.

I let out the vest with black velvet

Results. Figure 8 shows how often participants chose partial questions as relevant for the heard answer. Participants clearly distinguished between answers with Final NPA and answers with highlighted Objects (IH on NP) in block 1, as well as between answers with nuclear pitch accent at the end (Final NPA) and answers with nuclear pitch accent at the right edge of NP (NPA on NP) in block 2. They chose the partial question reliably more often for answers with IH on NP than for answers with final NPA (69 % vs. 40 %; $F_{1,24}=19.54$; $p < 0.001$). They also chose the partial question reliably more often for answers with NPA on NP (57 %) than for answers with final NPA (25%, $F_{1,24}=23.93$; $p < 0.001$). No reliable difference between answers with IH on NP and those with NPA on NP could be established.

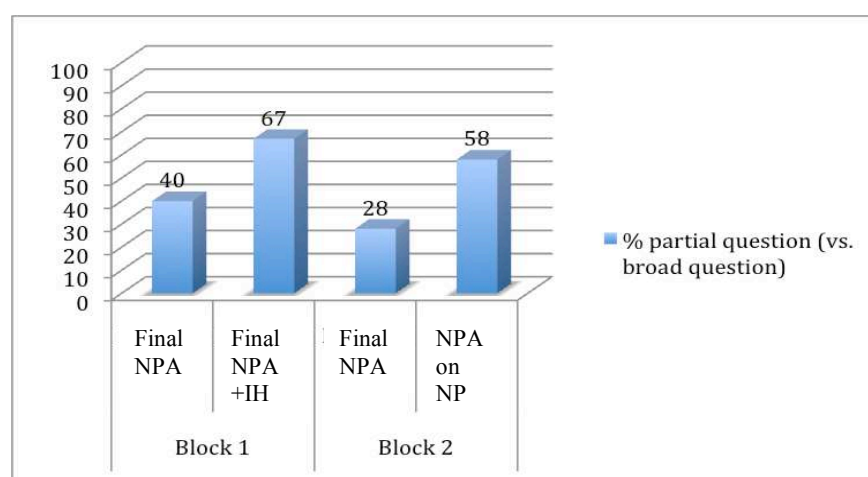


Figure 8. Results of Experiment II. On the x axis, the prosodic realization of the answers heard by participants, on the y axis, the percentage of partial question (vs. broad question) associated with each prosodic scheme.

Conclusion. Utterances with NPA on the Object or with IH Object are similarly recognized as answers to partial questions bearing on the Object.

4.2. Experiment III

The presence of IH in our production data concerns 72,6% of all responses to partial questions. Looking for an explanation, we linked this massive occurrence to the systematic presence of a set of alternatives in the eliciting contexts (see for example “films, leaflets, K7” in (2) above)⁵. We thus designed a second perception experiment in order to test the hypothesis that IH is related to the expression of Contrast as formulated by Rossi (1999). We define the notion of contrast as a membership relation in a set of alternatives activated in the immediate context (Chafe 1974).

Setup. The only difference between Experiments II and III is that we added a sentence presenting a set of alternatives in the description of the context before the presentation of the question. Otherwise the procedure was identical. For example, context (11) in which the phrase “le gilet et la veste” (in bold) corresponds to a set of two possible choices has been added to (10). The experiment involved 17 subjects, native speakers of French, first year undergrad students in Humanities at U. Paris Diderot, who did not participate in Experiment II.

(11) Pierre ne rentre plus dans son costume : **le gilet et la veste** sont trop serrés. Comme il est tailleur, il va faire les retouches. *His suit does not fit Pierre any longer: the vest and the jacket are too tight. As he is a tailor, he will alter them.*

Results: Figure 9 shows the percentage of partial questions chosen by participants to be consistent with the heard answer. The pattern is nearly identical to that of Experiment II. The 17 subjects chose the partial question reliably more often for answers with IH on NP (67 %) than for answers with final NPA (67 % vs. 40 %; $F_{1,17} = 8.86$, $p < 0.01$). They also chose the partial question reliably more often for answers with NPA on NP than for answers with final NPA (58 % vs. 28%, $F_{1,17} = 5.12$, $p < 0.04$). No reliable difference between answers with IH on NP and those with NPA on NP could be established.

⁵ This is due to the fact that our data come from an experiment originally designed to address the issue of “focus sensitive particles” where they appear as control material.

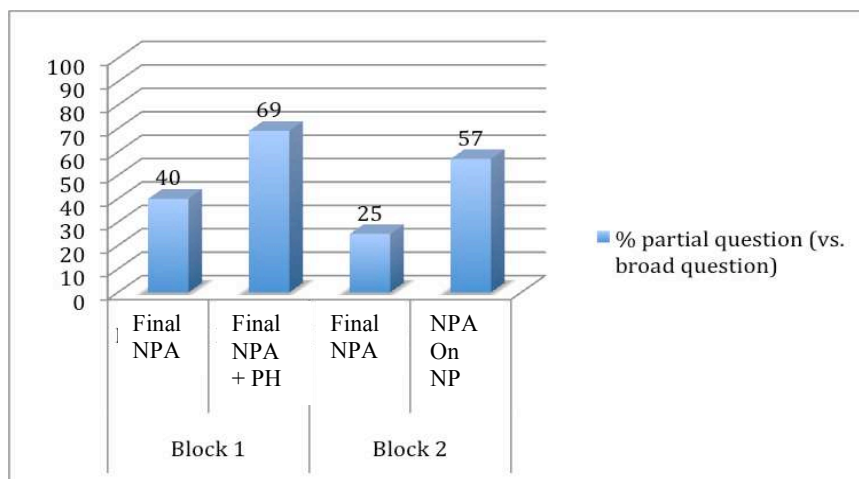


Figure 9. Results of Experiment III. On the x axis, the prosodic realization of the answers heard by participants, on the y axis, the percentage of partial question (vs. broad question) associated with each prosodic scheme.

Conclusion. The presence of alternatives in the immediate context does not influence the choice of marks of the R-XPs.

4.3. Conclusion of perception experiments

Both experiments show that speakers recognize the highlighting of the Object as a cue to its distinguished status. Accordingly, we conclude that hypothesis (9) is corroborated. Coming back to the intonational description of the corpus (summarized in figures 1a and 1b above), we observe:

- that 83,6 % of the answers to a partial question intonationally show a distinguished R-XPs either by NPA placement or by IH.
- that 50% of the answers to a broad question intonationally distinguish the Object, which is unexpected and has to be explained.

5. Analysis

In this section, we propose a unified analysis for NPA placement and IH. Its core content is that NPA placement and IH do not cue the same phenomenon: NPA placement is sensitive to the illocutionary import of the content of the utterance, while IH is a polyvalent means to give intonational distinctness to the content of a phrase.

5.1. Background: congruent vs. non congruent answers

In section 2.2, we took up the accepted distinction between congruent vs. non-congruent answers. The equation between IF and R–XP holds only in congruent answers. But, we know that in naturally occurring contexts, dialogue participants quite often answer in a non-congruent way: they contribute under or over-informative answers. (Krifka, 2001) This is easily explained by reasons of cooperation or default of cooperation. There is a whole gamut of cases. For example, it is very common that speakers offer over-informative answers anticipating the reason for questioning of the questioner. This is the case with over-informative answers in (12) and (13) below: in (12), the speaker doesn't produce a direct

answer to the polar question “Est-ce que Bernadette t'a contacté?”, but she produces an answer to the partial question “Qui t'a contacté?”, and this answer implies that the answer to the polar question is positive. In (13), the answer resolves the question and contributes a more precise information about the issue raised by the question.

- (12) A.: Est-ce que quelqu'un t'a contacté? *Did someone contact you ?*
 B.: Bernadette. *Bernadette did.*
- (13) A.: Qui t'a contacté? *Who contacted you ?*
 B.: Bernadette m'a envoyé un mail. *Bernadette sent me an email.*

A case of under-informative reply is given in (14): the answer does not resolve the question, while it contributes relevant information about the question.

- (14) A.: Qui t'a contacté? *Who contacted you ?*
 B.: Il n'y a pas eu d'appel *There was no call.*

To recapitulate, discourse participants –when they answer– do not simply resolve the question of the interlocutor; they have their own agenda and the answers they offer are a trade-off between what is required by the interlocutor's question, what they think is required and which information they are able/willing to give. In experiments in the lab, one does not control that aspect of the answers all that well, nor do we necessarily do so in natural dialogues. Accordingly, we do expect that not all answers we have elicited are congruent answers.

5.2. Proposal

Phrases that resolve a question (be they a constituent in a clause or the entire sentence) have a double status:

- a semantic status: they resolve the question,
- a pragmatic status: they contribute the new content, viz. that part of content that makes up the update brought forth by the assertion.

It is currently assumed that those two statuses are interdependent and coincide. They certainly do in congruent answers. Now, part of the working of non-congruent answers can be explained by the fact that both statuses are dissociated. For example, in (13), *Bernadette* resolves the question while the whole answer contributes the update brought over by the answer. If the statuses can be distinguished, their cueing can be too. Hence, we propose that:

- (15) NPA placement cues the part of the content that makes up the content of the update brought by the answer.
- (16) [Provisory] IH cues the constituent that resolves the question.

The proposal in (15) is just a reformulation in dialogical terms of Jacobs' 1984 definition of free focus (see also Beyssade *et al.* 2004). In terms of the contrast 'new vs. old' relativized to the working of the assertion, only the NPA placement is sensitive to the newness of the content.

We are now in a position to account for the distribution of the patterns we observe in the corpus including the answers that at first blush do not abide by (6) or (9).

5.3. Analysis of answers to a narrow question

Assuming (15) and (16), the analysis of patterns (4) can be made explicit for the answers to a partial question:

- Pattern (4a) conjoins both the semantic and pragmatic markings,
- Pattern (4b) only marks the pragmatic update.

Accordingly, the intonation of answers in pattern (4a) and (4b) fits the working of the QA pair: they are intonationally congruent.

- Pattern (4c) disjoins the statuses: the semantic relation is marked while the whole content is presented as making up the update of the answer. Accordingly, the intonation of answers in pattern (4c) is partly non-congruent.

Now, we turn to the 16,9% of the answers that we left aside in section 3: they show no IH and the NPA occurs at the end of the sentence. As such, the intonation does not cue the semantic relation holding with the question and they are realized like All Focus answers. They make up a clear case of intonational non-congruence. It certainly explains why they are so few in the corpus.⁶

5.4. Analysis of answers to a broad question

At first blush, the analysis of answers to a broad question should be simpler, since only the placement of NPA is relevant: we expect NPA at the end of the sentence, which corresponds to pattern (5). And indeed, 69,2% of them in the corpus show pattern (5).

We left aside 30,8 % of the answers in section 3. They show NPA at the right edge of the Object, which indeed corresponds to patterns (4a) or (4b) we observed for answers to a narrow question. In other words, those answers are intonationally realized as answers to a narrow question. As such, they make up a case of intonational non-congruence. Their number in the corpus is relatively high. We may speculate that it is in keeping with a tendency observed in naturally occurring contexts: speakers tend to offer answers which are more articulate than those that are required by polar or broad questions. Such a speculation has to be consolidated by experimental evidence.

5.5. Re-analysis of IH

Now, we observe that 19,2 % of the answers to a broad question show a highlighted Object while the NPA is at the right edge of the sentence, which corresponds to pattern (4c). According to (16), we should analyze them as resolving a question. Assuming a hierarchical model of dialogue à la Büring 2003 or Roberts 1996, we could posit a covert intermediary question as we did in the informal analysis of (13). But, this is not the intuition triggered by those answers. In fact, the intuition is that IH in those answers may have a presentational flavor: a marker of empathy with an element of the content (Kuno 2004) or a centering marker for the discourse topic to come.⁷ To capture such an intuition, we generalize (16) into

⁶ Moreover, sometimes participants' attention may falter in a long experiment. Between 5 and 15 % of errors can easily be expected for complex settings like that of experiment I.

⁷ This is roughly equivalent to the clefting of a phrase in presentational cleft sentences, as in (ii) and (iii) below :

A. : Qu'est-ce que c'est que ce bruit ? *Why that noise ?*

(17):

(17) IH sets off a constituent that is distinguished at the semantic or pragmatic level.

Claim (17) means that IH is a polyvalent marker that can be put to use for any sort of distinction. Resolving a question is just one among other distinguished statuses of phrases. Beyssade *et al.* 2008 observed that IH is also used to set off the associate of the restrictive adverb *seulement* ('only'). The results of experiment III prevents one to analyze IH as a marker of Contrast (i. e. membership in an activated set of alternatives): IH is certainly compatible with Contrast, but not a marker of it.

7. Conclusion

Placement of NPA in the utterance (with the correlative de-accentuation to the right) and Intonational Highlighting are two ways of setting off a phrase in French. Both are used in answers, but with different roles. NPA placement marks the part of content that is specifically asserted, which counts for the new content with respect to the working of assertion. In that respect, placement of NPA is the primary way of marking what is new in answers, and more generally in assertions. On the other hand, IH sets off a phrase for any semantic or pragmatic reason. It may be used to mark a phrase that resolves the question –thus cueing the semantic relation between questions and answers–, but also a phrase endowed with any other discourse role, in particular a role in the generation of the discourse topic.

The analysis of the results of Experiment I rests on the assumption that subjects in the lab behave as Speakers in everyday situation do: they do not always answer in a congruent way. The lack of control on the way subjects answer during an experiment turned out to be an advantage in the heuristic phase of our research we report here: it gave rise to non-congruent answers that show the dissociation of both marking strategies and their different motivation.

8. References

Berg, R. van den, C. Gussenhoven & A. Rietveld (1992). Downstep in Dutch: Implications for a model, Gerard J. Docherty & D. Robert Ladd (eds) *Papers in Laboratory Phonology II: Gesture, Segment, Prosody*. Cambridge: Cambridge University Press. 335-359.

Beyssade, C., E. Delais-Roussarie, J. Doetjes Jenny, J.-M. Marandin & A. Rialland (2004). Prosody and Information in French. Corblin, F. & H. de Swart (eds.), *Handbook of French Semantics*. CSLI, pp. 477-499.

Beyssade, C., B. Hemforth, J.-M. Marandin & C. Portes (2008). The prosody of restrictive *seulement* in French. *Third TIE Conference on Tone and Intonation*. Barcelone, pp. 15-17 September 2008.

Büring, D. (2003). On D-trees, beans, and B-accents. *Linguistics & Philosophy* 26:5, pp.

-
- B. : i. Marie tousse
ii. J'ai Marie qui tousse
iii. C'est Marie qui tousse

Mary coughs

511-545.

Chafe, W. (1974). Language and consciousness, *Language* 50-1, pp. 111-133.

Delattre, P. (1969). L'intonation par les oppositions, *Le français dans le monde* 64, pp. 6-12.

Di Cristo, A. (1999). Le cadre accentuel du français contemporain, *Langues* 3(2), pp.184-205, *Langues* 4(2), pp. 258-267.

Di Cristo, A. & L. Jankowski (1999). Prosodic organisation and phrasing after focus in French, *Proceedings of XIVth ICPHS*, San Francisco: USA, pp. 1565-1568.

Dohen, M. & H. Loevenbruck (2004). Pre-focal Rephrasing, Focal Enhancement and Post-focal Deaccentuation in French. *Proceedings of the 8th International Conference on Spoken Language Processing (ICSLP)*, pp. 1313-1316, http://www.isca-speech.org/archive/interspeech_2004.

Féry, C. (2001). Focus and phrasing in French. Féry, C. & W. Sternefeld (eds.), *Audiatur Vox Sapientiae. A Festschrift for Arnim von Stechow*. Berlin Akademie-Verlag, pp. 153-181.

Jacobs J. (1984). Funktionale Satzperspektive und Illokutionsemantik. *Linguistische Berichte* 91, pp. 25-58.

Jun, S.-A. & C. Fougeron (2000). A phonological model of French intonation. Botinis, A. (ed.) *Intonation: Analysis, modeling and technology*. Dordrecht, Kluwer, pp. 209-242.

Kadmon, N. (2001). *Formal Pragmatics: Semantics, Pragmatics, Presupposition, and Focus*, Blackwell.

Krifka, M. (2001). For a structured meaning account of questions and answers. Féry, C. & W. Sternefeld (eds.), *Audiatur Vox Sapientiae. A Festschrift for Arnim von Stechow*. Berlin, Akademie Verlag, pp. 287-319.

Kuno, S. (2004). Empathy and Direct Discourse Perspective. Horn L. & G. Ward, (eds) *The handbook of pragmatics*, Blackwell.

Ladd, D. R. (1996). *Intonational phonology*. Cambridge University Press, Cambridge.

Lambrecht, K. (1994). *Information structure and sentence form: topic, focus and the mental representations of discourse referents*, Cambridge University Press, Cambridge.

Post, B. (2000). *Tonal and phrasal structures in French intonation*, Holland Academic Graphics.

Roberts, C. (1996). Information structure in discourse: towards an integrated formal theory of pragmatics. Yvon J. H. & A. Kathol (eds.). *OSU Working Papers in Linguistics* 49.

Rossi, M. (1999). *L'intonation: le système du français*. Ophrys, Paris.

Selkirk, L. (2009). A New Paradigm for Studying the Prosodic Distinction between Contrastive Focus and Discourse-New. Presentation at IDP 09. *this volume*.

Vallduví, E. & E. Engdahl (1996). The linguistic realization of information packaging. *Linguistics* 34: 3, pp. 459-519.

Vallduví, E. & M. Vilks (1998). On rheme and kontrast. Culicover, P. & L. McNally (eds.), *The limits of syntax*, Academic Press, New-York, pp. 79-108.